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ATTRITION OF SCIENTISTS AND ENGINEERS AT SEVEN AGENCIES 1/1

(U) GENERAL ACCOUNTING OFFICE WASHINGTON DC RESOURCES

COMMUNITY AND ECONOMIC DEVELOPMENT DIV 29 MAY 84

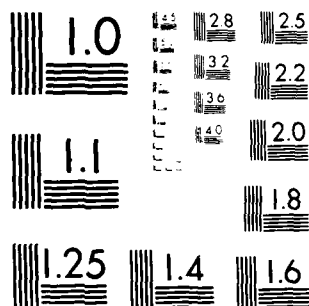
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BY THE U.S. GENERAL ACCOUNTING OFFICE

## Report To The Honorable Albert Gore, Jr. House Of Representatives

### Attrition Of Scientists And Engineers At Seven Agencies

GAO developed data on the attrition of scientists and engineers between 1979 and 1983 at the Consumer Product Safety Commission, the Environmental Protection Agency, the Food and Drug Administration, the National Aeronautics and Space Administration, the National Bureau of Standards, the National Institutes of Health, and the Occupational Safety and Health Administration.

GAO generally found that changes in the scientific workforce paralleled changes in the total workforce. A comparison of changes in the scientific and nonscientific workforces, however, showed an inconsistent pattern. At three agencies the attrition was higher for the scientists and engineers than for the nonscientific workforce, and at three agencies the attrition rate for scientists and engineers was lower. At one agency, both workforces increased but the scientific workforce increased at a lesser rate than the nonscientific workforce.

GAO also found that agency reductions-in-force were a factor in the attrition of scientists at five of the seven agencies. Further, GAO's analysis of scientific employment by occupation and type of research and development activities engaged in disclosed that trends varied by agency.

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UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,  
AND ECONOMIC DEVELOPMENT  
DIVISION

B-209389

The Honorable Albert Gore, Jr.  
House of Representatives

Dear Mr. Chairman:

On September 14, 1983, your office requested data on attrition of scientists and engineers between 1979 and 1983 from seven agencies: the Consumer Product Safety Commission (CPSC), the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the National Aeronautics and Space Administration (NASA), the National Bureau of Standards (NBS), the National Institutes of Health (NIH), and the Occupational Safety and Health Administration (OSHA). Our review and the data that we developed are summarized below. More detailed data for the respective agencies are presented in appendixes I through VII.

OBJECTIVES, SCOPE, AND METHODOLOGY

To provide the requested data, we extended the analysis provided to you in an earlier report, Attrition of Scientists at Three Regulatory Agencies, PAD-83-16, Dec. 27, 1982,<sup>1</sup> by adding four agencies (OSHA, NBS, NIH, and NASA). To find out the trends in scientific personnel (scientists and engineers) over a 5-year period (1979-83), we asked agencies to supply us with data for this period.

We asked the seven agencies to provide us with four sets of data from their personnel information systems: (1) changes in levels of scientific personnel by grade levels, (2) the number of separations occurring for reductions-in-force and for other reasons, (3) occupational changes in the scientific workforces, and (4) changes in the functions engaged in by scientific employees. These data, presented in tables in a separate appendix for each agency, cover permanent full-time employees.

After analyzing the data, we interviewed each agency's personnel officials to find out the reasons for changes in staffing

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<sup>1</sup>The three agencies were EPA, FDA, and CPSC.



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levels and the separations of scientific employees. These comments, where made, have been incorporated into the appendix for each agency. We did not independently verify the data or determine the reasons underlying changes or separations of scientific employees from the seven agencies examined other than by explanations that agency officials gave us.

We did not obtain agency comments. We did, however, discuss the contents of this report with the personnel directors of each of the seven agencies. They agreed with the accuracy of the facts presented for their respective agencies. Except as noted above, we performed our review in accordance with generally accepted government auditing standards. Our review was performed during the period September 1983 to December 1983.

#### SUMMARY OF CHANGES IN AGENCY WORKFORCES

The table below summarizes the percent change for three aspects of the agency workforces: (1) total workforce, (2) scientific workforce, and (3) nonscientific workforce.

<u>Agency</u>	<u>Change in Workforce</u> <u>September 30, 1979 to June 30, 1983<sup>a</sup></u>		
	<u>Total</u> <u>workforce</u> <u>increase</u> <u>(decrease)</u>	<u>Scientific</u> <u>workforce</u> <u>increase</u> <u>(decrease)</u>	<u>Nonscientific</u> <u>workforce</u> <u>increase</u> <u>(decrease)</u>
	----- (percent) -----		
CPSC	(36.7)	(31.5)	(21.3)
EPA	1.1	( 6.2)	9.4
FDA	(10.5)	( 5.9)	(14.1)
NASA	( 2.9)	( 2.8)	( 5.1)
NBS	(10.7)	(10.5)	(11.0)
NIH	7.2	3.2	10.7
OSHA	(12.5)	(14.9)	(2.3)

<sup>a</sup>Five of the seven agencies supplied data as of June 30, 1983, with the exception of EPA (Sept. 3, 1983) and OSHA (March 31, 1979 - October 10, 1983).

As shown in the table above, the direction of changes in scientific workforce parallels the direction of changes in the total workforce, except at EPA. The table also shows an inconsistent pattern when changes in the scientific workforce are compared with the changes in the nonscientific workforce. At three agencies, CPSC, EPA, and OSHA, attrition was higher for scientists and engineers than for the nonscientific workforce. At

three other agencies, FDA, NASA, and NBS, the attrition rate for scientists and engineers was lower. At NIH, both workforces increased but the scientific workforce increased at a lesser rate than the nonscientific workforce.

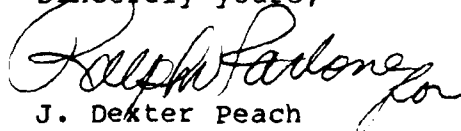
Between 1979 and 1983, agency reductions-in-force were a factor in the attrition of scientific personnel at CPSC, EPA, NASA, NBS, and OSHA. In addition to attritions directly attributable to reductions-in-force, some voluntary separations by scientists and engineers might actually have been due to the announcement of impending reductions-in-force. FDA and NIH had no separations attributable to reductions-in-force. The separations of scientific personnel by agency are shown in table 2 of appendixes I through VI. Separations that occurred for reasons other than those formally related to reductions-in-force can include retirements, resignations, or transfers. OSHA was not able to provide us with data on the number of separations due to reductions-in-force or other reasons because OSHA did not collect it. Table 2 cannot be compared with table 1 because while the former shows numbers of separations, data presented in table 1 reflect year-end totals (which combine separations and hires).

Trends in scientific employment by occupation and by type of work that scientists and engineers engaged in varied by agency. Gains and losses occurred for a number of reasons including redefinition of agency focus in certain programs and reclassification to other scientific occupations. CPSC was the only agency we reviewed that showed a decline during this period in its top five scientific occupations. The changes in the occupational makeup of each agency's scientific workforce are shown in tables 3 and 4 of appendixes I through VII.

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As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of the report. At that time we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

  
J. Dexter Peach  
Director

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## ABBREVIATIONS

CPSC	Consumer Product Safety Commission
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FY	fiscal year
GS	general schedule
GM	General Schedule - Merit (merit pay category)
NASA	National Aeronautics and Space Administration
NBS	National Bureau of Standards
NIH	National Institutes of Health
OSHA	Occupational Safety and Health Administration
RIF	reduction-in-force
S&E	scientists and engineers
SES	Senior Executive Service

THE CONSUMER PRODUCT SAFETY COMMISSION (CPSC)

Table 1 shows that between September 30, 1980, and June 30, 1983, CPSC's scientific and engineering staff declined by 31.5 percent. Of that number, there was a 21.3-percent loss in the nonscientific and engineering staff and a 36.7-percent loss in the total agency full-time workforce. The largest change occurred in fiscal year 1982, when the agency lost 15.5 percent of employees classified as scientists and engineers. This loss, however, was lower than the 25.1-percent loss of nonscientific and engineering staff and the agency's total loss of 23 percent during this fiscal year.

Table 2, describing separations among scientific personnel, shows that most separations (those due to reductions-in-force (RIFs) and those occurring for other reasons) were at the General Schedule (GS) 11-12 levels (11 RIFs and 27 other separations). In comparison, GS 13-15 levels, including General Schedule-Merit (GM), had 6 RIFs and 21 other separations. (Merit pay employees are those guaranteed only one-half of the annual salary adjustments that most General Schedule employees receive. Other permanent salary increases must be competed for.) At the Senior Executive Service (SES) level, no persons were RIFed and only one was separated for other reasons.

When analyzed by occupation, as in table 3, the number of scientific personnel categorized as consumer safety officers dropped by 94.3 percent. However, according to CPSC officials, this change primarily resulted from reclassification rather than attrition. Late in 1979, the consumer safety officers were reclassified to product safety investigators. The latter series is not listed as a scientific occupation. CPSC officials said that this change in title was necessary to reflect changes in work and does not indicate separations of these employees from the Commission.

CPSC was not able to supply data on the functions that scientists and engineers (S&E) engaged in.



## CONSUMER PRODUCT SAFETY COMMISSION

Table 1  
Change in Scientific and Overall Employment by Agency<sup>a</sup>  
(Permanent Full-Time Employees)

Agency	Total <sup>b</sup> 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change						Overall change	
						FY 1980		FY 1981		FY 1982		FY 1983 10/01/82 - 6/30/83	
						No.	Percent	No.	Percent	No.	Percent	No.	Percent
Total <sup>b</sup>	843	841	748	576	538	-2	-0.2	-93	-11.1	-172	-23.0	-38	-6.6
Nonscientific & engineering staff <sup>c</sup>	489	510	517	387	385	+21	+4.3	+7	+1.4	-130	-25.1	-2	-0.5
Scientific & engineering staff <sup>c</sup>	168	143	129	109	115	-25	-14.9	-14	-9.8	-20	-15.5	+6	+5.5
GS 7-9	a	14	18	8	11	a	a	+4	+28.6	-10	-55.6	+3	+37.5
GS 11-12	a	55	38	32	35	a	a	-17	-30.9	-6	-15.8	+3	+9.4
GM and GS 13-15	a	71	71	67	66	a	a	0	0.0	-4	-5.6	-1	-1.5
SES	a	3	2	2	3	a	a	-1	-33.3	0	0.0	+1	+50.0

<sup>a</sup>The agency was not able to supply grade-level data for fiscal year 1979.

<sup>b</sup>Includes all full-time employment (includes GS 1-6 employees).

<sup>c</sup>Total based on full-time employment GS-7 through SES levels only.

The agency was unable to supply data for clustering of grade levels.

Source: Prepared by GAO from data provided by CPSC.

CONSUMER PRODUCT SAFETY COMMISSION

Table 2  
Separations Among Scientific Personnel by Type and Grade Level  
(Permanent Full-Time Employees)

Type of separation	FY 1980 10/01/79- 9/30/80	FY 1981 10/01/80- 9/30/81	FY 1982 10/01/81- 9/30/82	FY 1983 10/01/82- 6/30/83
	Number	Number	Number	Number
RIF related	1	0	16	0
GS 7-9	0	0	0	0
GS 11-12	0	0	11	0
GM/GS 13-15	1	0	5	0
SES	0	0	0	0
All other separations	17	12	15	7
GS 7-9		1		1
GS 11-12	9	5	11	2
GM/GS 13-15	8	5	4	4
SES	0	1	0	0
Total separations	18	12	31	7

Source: Prepared by GAO from data provided by CPSC.

CONSUMER PRODUCT SAFETY COMMISSION

Table 3

Scientific Employment by Occupation<sup>a</sup>  
(Permanent Full-Time Employees)

Selected occupational series	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change						Overall change	
						FY 1980	FY 1981	FY 1982	FY 1983 10/01/79 - 6/30/83	9/30/79- 6/30/83			
						No. Percent	No. Percent	No. Percent	No. Percent	No.	Percent	No.	Percent
Consumer Safety Officers	35	6	4	3	2	-29 -82.9	-2 -33.3	-1 -25.0	-1 -33.3	-33	-94.3		
Chemistry	27	22	21	10	10	-5 -18.5	-1 -4.5	-11 -52.4	0 0.0	-17	-63.0		
General Engineering	19	13	12	16	15	-6 -31.6	-1 -7.7	+4 +33.3	-1 -6.3	-4	-21.1		
Economist	19	16	16	14	16	-3 -15.8	0 0.0	-2 -12.5	-2 -14.3	-3	-15.8		
Electrical Engineer	14	11	8	7	7	-3 -21.4	-3 -27.3	-1 -12.5	0 0.0	-7	-50.0		
Other S&E	54	75	68	59	65	+21 +38.9	-7 -9.3	-9 -13.2	+6 +10.2	+11	+20.4		
Total S&E	168	143	129	109	115	-25 -14.9	-14 -9.8	-20 -15.5	+6 +5.5	-53	-31.5		

<sup>a</sup>Occupations selected on basis of largest populations within agency.

Source: Prepared by GAO from data provided by CPSC.

THE ENVIRONMENTAL PROTECTION AGENCY (EPA)

In contrast to the six other agencies, EPA provided us with data by calendar year rather than fiscal year. At EPA, while the total number of employees increased slightly (1.1%) between September 30, 1979, and September 3, 1983, the scientific and engineering staff declined by 6.2 percent. The nonscientific and engineering staff showed an increase of 9.4 percent. When analyzed by grade level, attrition of scientific and engineering staff appeared to be more severe in certain clusterings of grade levels. The GS 7-9 category, for example, declined by 73 percent between September 30, 1979, and September 3, 1983. Almost all of these losses occurred between January 1981 and September 1983. An EPA personnel official said that these losses were due to an agency-wide freeze retroactive to the date of the 1980 presidential election, as well as hiring controls in the period examined. Losses in EPA's Senior Executive Service were highest in 1981 with continuing losses in 1982 and the first 9 months of 1983.

Table 2 shows that the highest number of separations from the scientific workforce occurred in calendar year 1981, but the highest number of RIFs occurred in 1982.

As table 3 shows, EPA's six largest scientific occupations declined in 1982. Although large losses appear to be in the general engineering category, with a 45.9-percent loss in 1981 (157 to 185 employees), an EPA personnel officer explained that many employees in the general engineering category were reclassified as environmental engineers. This category, the largest occupational group among EPA scientists, increased by 8.8 percent (1,138 to 1,238 employees) during 1981.

An analysis of the functions that the EPA workforce is engaged in shows that the largest category of employees are classified as scientists who collect and analyze data. This category, as table 4 shows, saw little change. The research and planning categories showed losses from January 1981 to June 1983, while the management category declined steadily throughout the entire period.

## ENVIRONMENTAL PROTECTION AGENCY

Table 1  
Change in Scientific and Overall Employment by Agency  
(Permanent Full-time Employees)

Agency	Total 9/30/79	Total 12/31/80	Total 12/31/81	Total 12/31/82	Total 9/03/83	Annual change										Overall change	
						10/79-12/80		1/81-12/81		1/82-12/82		1/83 - 9/83		No.	Percent	No.	Percent
Total	7,707	8,207	8,186	7,805	7,791	+500	+6.5	-21	-0.3	-381	-4.7	-14	-0.2	+84	+1.1		
Non-scientific & engineering staff	3,612	4,032	4,030	3,910	3,950	+420	+11.6	-2	-0.05	-120	-3.0	+40	+1.0	+338	+9.4		
Scientific & engineering staff	4,095	4,175	4,156	3,895	3,841	+80	+2.0	-19	-0.5	-261	-6.3	-54	-1.4	-254	-6.2		
GS 7-9	538	535	339	198	145	-3	-0.6	-196	-36.6	-141	-41.6	-53	-26.8	-393	-73.0		
GS 11-12	1,605	1,580	1,688	1,636	1,622	-25	-1.6	+8	.8	-52	-3.1	-14	-0.9	+17	+1.1		
GM and GS 13-15	1,826	1,930	2,025	1,961	1,981	+104	+5.7	+95	+4.9	-64	-3.2	+20	+1.0	+155	+8.5		
SES	126	130	104	100	93	+4	+3.2	-26	-20.0	-4	-3.8	-7	-7.0	-33	-26.2		

Source: Prepared by GAO from data provided by EPA.

ENVIRONMENTAL PROTECTION AGENCY

Table 2  
Separations Among Scientific Personnel by Type and Grade Level  
(Permanent Full-Time Employees)

Type of separation	10/01/79-12/31/80	1/01/81-12/31/81	1/01/82-12/31/82	1/01/83-6/30/83
	Number	Number	Number	Number
RIF related	0	48	76	5
GS 7-9	0	0	0	0
GS 11-12	0	0	0	0
GM/GS 13-15	0	0	0	0
SES	0	0	0	0
All other separations	340	413	193	50
GS 7-9	73	99	27	2
GS 11-12	134	161	76	17
GM/GS 13-15	129	130	84	27
SES	4	23	6	4
Total separations	340	461	269	55

Source: Prepared by GAO from data provided by EPA.

## ENVIRONMENTAL PROTECTION AGENCY

Table 3  
Scientific Employment by Occupation<sup>a</sup>  
(Permanent Full-Time Employees)

Selected occupational series	Total 9/30/79	Total 12/31/80	Total 12/31/81	Total 12/31/82	Total 9/03/83	Annual change						Overall change	
						10/79-12/80	1/81-12/81	1/82-12/82	1/83 - 9/83			9/30/79 - 9/03/83	
						No. Percent	No. Percent	No. Percent	No. Percent	No.	Percent	No.	Percent
Environmental Engineering	1,074	1,138	1,238	1,176	1,169	+64 +6.0	+100 +8.8	-62 -5.0	-7 -0.6	+95	+8.8		
General Physical Science	795	875	886	825	822	+80 +10.1	+11 +1.3	-61 -6.9	-3 -0.4	+27	+3.4		
Chemistry	562	580	575	538	525	+18 +3.2	-5 -0.9	-37 -6.4	-13 -2.4	-37	-6.6		
General Biological Science	452	473	497	471	479	+21 +4.6	+24 +5.1	-26 -5.2	+8 +1.7	+27	+6.0		
General Engineering	250	157	85	64	56	-93 -37.2	-72 -45.9	-21 -24.7	-8 -12.5	-194	-77.6		
Chemical Engineering	140	134	123	117	117	-6 -4.3	-11 -8.2	-6 -4.9	0 0.0	-23	-16.4		
Other S&E	822	818	752	704	673	-4 -0.5	-66 -8.1	-48 -6.4	-31 -4.4	-149	-18.1		
Total S&E	4,095	4,175	4,156	3,895	3,841	+80 +2.0	-19 -0.5	-261 -6.3	-54 -1.4	-254	-6.2		

<sup>a</sup>Occupations selected on basis of largest populations within agency.

Source: Prepared by GAO from data provided by EPA.

ENVIRONMENTAL PROTECTION AGENCY

Table 4  
Scientific Employment by Functional Classification<sup>a</sup>  
(Permanent Full-Time Employees)

Selected functional series	Total 9/30/79	Total 12/31/80	Total 12/31/81	Total 12/31/82	Total 6/30/83	Annual change						Overall change	
						10/79-12/80	1/81-12/81	1/82-12/82	1/83 - 6/83			9/30/79 - 6/30/83	
						No. Percent	No. Percent	No. Percent	No. Percent	No.	Percent	No.	Percent
Data collection, processing, and analysis	1,022	1,158	1,138	1,048	1,016	+136 +13.3	-20 -1.7	-90 -7.9	-32 -3.1	-6	-0.6	-34	-5.5
Technical assistance and consulting	617	490	641	590	583	-127 -20.6	+151 +30.8	-51 -8.0	-7 -1.2	+28	+4.6	-84	-14.3
Regulatory enforcement and licensing	612	631	617	619	640	+19 +3.1	-14 -2.2	+2 +0.3	+21 +3.4	-69	-22.7	-71	-27.1
Research	587	613	557	504	503	+26 +4.4	-56 -9.1	-53 -9.5	-1 -0.2	-104	-10.3	-304	-7.4
Planning	304	314	296	254	235	+10 +3.3	-18 -5.7	-42 -14.2	-19 -7.5				
Management	262	247	210	201	191	-15 -5.7	-37 -15.0	-9 -4.3	-10 -5.0				
Other S&E	1,013	1,027	979	932	909	+14 +1.4	-48 -4.7	-47 -4.8	-23 -2.5				
Total S&E <sup>b</sup>	4,417	4,480	4,438	4,148	4,077	+63 +1.4	-42 -0.9	-290 -6.5	-71 -1.7				

<sup>a</sup>Functional categories selected on basis of largest populations within agency.

<sup>b</sup>Total for scientific and engineering workforce varies from tables 1 and 3. Agency was unable to reconcile difference.

Source: Prepared by GAO from data provided by EPA.



THE FOOD AND DRUG ADMINISTRATION (FDA)

Table 1 shows that while nonscientific and engineering staff at FDA declined by 14.1 percent between September 30, 1979, and June 30, 1983, FDA's scientific and engineering staff declined by 5.9 percent during the same period. The agency's total workforce fell by 10.5 percent. Other noteworthy patterns of change seen in table 1 are an increase of 12.1 percent in the number of GS 11-12's and a decrease of 77.5 percent of employees in the GS 7-9 category.

Table 2 shows that between September of 1979 and June of 1983, no separations occurred from FDA due to reductions-in-force. The number of departures due to reasons other than reductions-in-force steadily declined in the period examined for GS 7-9's. Annual departures were fairly uniform for other grade levels during this period.

Tables 3 and 4, which respectively describe changes in FDA's scientific workforce by occupation and function, show slight changes in these two categories during the period examined.

## FOOD AND DRUG ADMINISTRATION

Table 1  
Change in Scientific and Overall Employment by Agency  
(Permanent Full-Time Employees)

Agency	Annual change						Overall change	
	FY 1980		FY 1981		FY 1982		FY 1983 10/01/82 - 6/30/83	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Total	7,667	7,517	7,101	6,850	6,865			
Nonscientific & engineering staff	4,284	4,142	3,731	3,632	3,680			
Scientific & engineering staff	3,383	3,375	3,370	3,218	3,185			
GS 7-9	560	419	247	135	126			
GS 11-12	1,344	1,413	1,546	1,545	1,507			
GM and GS 13-15	1,419	1,486	1,517	1,474	1,488			
SES	60	57	60	64	64			
	-150	-2.0	-416	-5.5	-251	-3.5	+15	+0.2
	-142	-3.3	-411	-9.9	-99	-2.7	+48	+1.3
	-8	-0.2	-5	-0.1	-152	-4.5	-33	-1.0
	-141	-25.2	-172	-41.1	-112	-45.3	-9	-6.7
	+69	+5.1	+133	+9.4	-1	-0.1	-38	-2.5
	+67	+4.7	+31	+2.1	-43	-2.8	+14	+0.9
	-3	-5.0	+3	+5.3	+4	+6.7	0	0.0
							-802	-10.5
							-604	-14.1
							-198	-5.9
							-434	-77.5
							+163	+12.1
							+69	+4.9
							+4	+6.7

Source: Prepared by GAO from data provided by FDA.

FOOD AND DRUG ADMINISTRATION

Table 2  
Separations Among Scientific Personnel by Type and Grade Level  
(Permanent Full-Time Employees)

Type of separation	FY 1980 10/01/79- 9/30/80	FY 1981 10/01/80- 9/30/81	FY 1982 10/01/81- 9/30/82	FY 1983 10/01/82- 6/30/83
	Number	Number	Number	Number
RIF related	0	0	0	0
GS 7-9	0	0	0	0
GS 11-12	0	0	0	0
GM/GS 13-15	0	0	0	0
SES	0	0	0	0
All other separations	156	149	138	93
GS 7-9	32	24	11	4
GS 11-12	60	61	60	45
GM/GS 13-15	58	61	66	43
SES	6	3	1	1
Total separations	156	149	138	93

Source: Prepared by GAO from data provided by FDA.

## FOOD AND DRUG ADMINISTRATION

Table 3  
Scientific Employment by Occupation<sup>a</sup>  
(Permanent Full-Time Employees)

Selected occupational series	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change				Overall change	
						FY 1980	FY 1981	FY 1982	FY 1983 10/01/82 - 6/30/83	9/30/79 - 6/30/83	No. Percent
Consumer Safety Officers	1,614	1,601	1,575	1,527	1,490	-13 -0.8	-26 -1.6	-48 -3.0	-37 -2.4	-124 -7.7	No. Percent
Chemists	953	946	945	900	909	-7 -0.7	-1 -0.1	-45 -4.8	+9 +1.0	-44 -4.6	No. Percent
Microbiologists	288	291	299	278	273	+3 +1.0	+8 +2.7	-21 -7.0	-5 -1.8	-15 -5.2	No. Percent
General Biological Science	124	130	141	127	130	+6 +4.8	+11 +8.5	-14 -9.9	+3 +2.4	+6 +4.8	No. Percent
Pharmacologists	108	107	109	104	102	-1 -0.9	+2 +1.9	-5 -4.6	-2 -1.9	-6 -5.6	No. Percent
Medical Officers	99	103	104	95	98	+4 +4.0	+1 +1.0	-9 -8.7	+3 +3.2	-1 -1.0	No. Percent
Other S&E	197	197	197	187	183	0 0.0	0 0.0	-10 -5.1	-4 -2.1	-14 -7.1	No. Percent
Total S&E <sup>b</sup>	3,383	3,375	3,370	3,218	3,185	-8 -0.2	-5 -0.1	-152 -4.5	-33 -1.0	-198 -5.9	No. Percent

occupations selected on basis of largest populations within agency.

Total includes only S&E scientists and engineers in GS 7-9, GS 11-12, GM/GS 13-15, and SES ranks.

Source: Prepared by GAO from data provided by FDA.

FOOD AND DRUG ADMINISTRATION

Table 4  
Scientific Employment by Functional Classification<sup>a</sup>  
(Permanent Full-Time Employees)

Selected functional category	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change				Overall change	
						FY 1980	FY 1981	FY 1982	FY 1983 10/01/82 - 6/30/83	9/30/79 - 6/30/83	
Regulatory Enforcement & Licensing	1,813	1,831	1,810	1,748	1,706	No. Percent +18 +1.0	No. Percent -21 -1.1	No. Percent -62 -3.4	No. Percent -42 -2.4	No. Percent -107 -5.9	
Test & Evaluation	850	833	816	771	779	-17 -2.0	-17 -2.0	-45 -5.5	+8 +1.0	-71 -8.4	
Research and Development	343	354	387	366	375	+11 +3.2	+33 +9.3	-21 -5.4	+9 +2.5	+32 +9.3	
Standards & Specifications	93	85	94	82	80	-8 -8.6	+9 +10.6	-12 -12.8	-2 -2.4	-13 -14.0	
Other S&E	284	272	261	251	245	-12 -4.2	-11 -4.0	-10 -3.8	-6 -2.4	-39 -13.7	
Total S&E <sup>b</sup>	3,383	3,375	3,368	3,218	3,185	-8 -0.2	-7 -0.2	-150 -4.5	-33 -1.0	-198 -5.9	

<sup>a</sup>Functional categories selected on basis of largest populations within agency.

<sup>b</sup>Total includes only scientists and engineers in GS 7-9, GS 11-12, GM/GS 13-15, and SES ranks.

Source: Prepared by GAO from data provided by FDA.

THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

Table 1, depicting annual changes in scientific as well as overall agency employment, indicates a small decline in staff totals for fiscal year 1980 through the third quarter of fiscal year 1983. Losses in the scientific and engineering staff (-2.8%) varied little from losses in the total agency workforce (-2.9%). The nonscientific and engineering staff fell by 5.1 percent. At the GS 7-9 level, staffing increases occurred during fiscal years 1980 and 1983. In fiscal year 1980, a large number of separations occurred. By agency policy, replacements are concentrated at the entry level resulting in hires of scientists and engineers at the GS 7-9 level. NASA officials also described 1983 as a unique year for hiring. Private sector hiring of new scientists and engineers was down due to economic factors. This permitted NASA to attract a large number of highly qualified college graduates for entry level positions. Table 1's data also show decline in the GS 11-12 population from 1979 through 1983. NASA officials explained that this decline was part of a natural transition of intermediate grades (11-12's) being promoted to senior positions after fiscal year 1980 losses at higher grades.

Table 2 shows that the number of separations from the agency declined between fiscal years 1980 and 1983. A large number of separations occurred among GS 13-15's and in the SES ranks from fiscal year 1980 to fiscal year 1981. Agency officials attributed this high rate of separations to federal-wide financial incentives available to retirees at the time, combined with large numbers of retirement eligibles within the group hired immediately following the establishment of NASA along with the passage of the National Aeronautics and Space Administration Act of 1958 (P.L. 85-568). In addition, during fiscal years 1981 and 1982, the Office of Personnel Management approved voluntary "early out" authority for three NASA installations. This authority provided pay and benefit incentives for early retirement to achieve necessary staffing adjustment without recourse to a major RIF.

Table 3 describes scientific employment by occupation. The largest changes were in NASA's occupational categories in mathematics and general physical science, which showed losses of 13.4 and 15.6 percent, respectively.

Table 4 describes scientific employment by functional classification. A greater number of losses are shown in the design category for fiscal years 1981 and 1982 than in the other selected functions. Only half of the design losses left the agency. The remaining were reassigned to other functional categories. Overall, the chart shows relative stability because the decline in total scientific and engineering populations was only 2.9 percent over an approximate 4-year period. The overall NASA population also declined 2.9 percent during the same period.

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Table 1  
Change in Scientific and Overall Employment by Agency  
(Permanent Full-Time Employees)

Agency	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change				Overall change	
						FY 1980	FY 1981	FY 1982	FY 1983 10/01/82 - 6/30/83	No.	Percent
Totals <sup>a</sup>	22,633	22,613	21,844	21,186	21,976	No. -20 Percent -0.1	No. -769 Percent -3.4	No. -658 Percent -3.0	No. +790 Percent +3.7	-657	-2.9
Non scientific & engineering staff	6,587	6,506	6,421	6,265	6,253	-81 -1.2	-85 -1.3	-156 -2.4	-12 -0.2	-334	-5.1
Scientific & engineering staff	11,256	11,186	10,902	10,730	10,946	-70 -0.6	-284 -2.5	-172 -1.6	+216 +2.0	-310	-2.8
GS 7-9	448	646	635	570	737	+198 +44.2	-11 -1.7	-65 -10.2	+167 +29.3	+289	+64.5
GS 11-12	1,999	1,860	1,781	1,748	1,722	-139 -7.0	-79 -4.2	-33 -1.9	-26 -1.5	-277	-13.9
GS 13-15	8,452	8,336	8,158	8,080	8,147	-116 -1.4	-178 -2.1	-78 -1.0	+67 +0.8	-305	-3.6
SES	357	344	328	332	340	-13 -3.6	-16 -4.7	+4 +1.2	+8 +2.4	-17	-4.8

<sup>a</sup>Total NASA workforce includes other non-S&E pay plans and grades.

Source: Prepared by GAO from data provided by NASA.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Table 2  
Separations Among Scientific Personnel by Type and Grade Level  
(Permanent Full-Time Employees)

Type of separation	FY 1980 10/01/79- 9/30/80	FY 1981 10/01/80- 9/30/81	FY1982 10/01/81- 9/30/82	FY1983 10/01/82- 6/30/83
	Number	Number	Number	Number
RIF related	24	181	66	43
GS 7-9	0	1	0	1
GS 11-12	2	10	8	19
GM and GS 13-15	21	162	55	19
SES	1	8	3	4
All other separations	796	500	458	230
GS 7-9	44	41	39	19
GS 11-12	89	86	80	39
GM and GS 13-15	586	343	304	161
SES	77	30	35	11
Total separations	820	681	524	273

Source: Prepared by GAO from data provided by NASA.



## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Table 3  
Scientific Employment by Occupation<sup>a</sup>  
(Permanent Full-Time Employees)

Selected occupational series	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change				Overall change	
						FY 1980	FY 1981	FY 1982	FY 1983 10/01/82 - 6/30/83	9/30/79 - 6/30/83	
						No. Percent	No. Percent	No. Percent	No. Percent	No. Percent	
Aerospace Engineering	3,819	3,782	3,717	3,752	3,865	-37 -1.0	-65 -1.7	+35 +0.9	+113 +3.0	+46 +1.2	
General Engineering	2,726	2,706	2,665	2,605	2,635	-20 -0.7	-41 -1.5	-60 -2.3	+30 +1.2	-91 -3.3	
Electronic Engineering	1,668	1,712	1,677	1,642	1,720	+44 +2.6	-35 -2.0	-35 -2.1	+78 +4.8	+52 +3.1	
Mathematics	729	715	682	642	631	-14 -1.9	-33 -4.6	-40 -5.9	-11 -1.7	-98 -13.4	
General Physical Science	455	447	414	393	384	-8 -1.8	-33 -7.4	-21 -5.1	-9 -2.3	-71 -15.6	
Astronomy & Space Science	418	438	425	393	392	+20 +4.8	-13 -3.0	-32 -7.5	-1 -0.3	-26 -6.2	
Other S&E	1,469	1,410	1,343	1,319	1,331	-59 -4.0	-67 -4.8	-24 -1.8	+12 +0.9	-138 -9.4	
Total S&E	11,284	11,210	10,923	10,746	10,958	-74 -0.7	-287 -2.5	-177 -1.6	+212 +2.0	-326 -2.9	

<sup>a</sup>Occupations selected on basis of largest populations within agency.

Source: Prepared by GAO from data provided by NASA.

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Table 4  
Scientific Employment by Functional Classification<sup>a</sup>  
(Permanent Full-Time Employees)

Selected functional category	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change				Overall change	
						FY 1980		FY 1981		FY 1982	
						No.	Percent	No.	Percent	No.	Percent
Development	3,815	3,922	3,878	3,896	4,059	+107	+2.8	-44	-1.1	+18	+0.5
Research	2,219	2,173	2,122	2,125	2,175	-46	-2.1	-51	-2.3	+3	+0.1
Management	1,612	1,588	1,596	1,521	1,551	-24	-1.5	+8	+0.5	-75	-4.7
Data Collection, Processing, & Analysis	772	750	701	643	639	-22	-2.8	-49	-6.5	-58	-8.3
Test & Evaluation	712	661	654	644	633	-51	-7.2	-7	-1.1	-10	-1.5
Design	657	634	550	501	504	-23	-3.5	-84	-13.2	-49	-8.9
Installation, Operations & Maintenance	593	558	523	498	481	-35	-5.9	-35	-6.3	-25	-4.8
Other S&E	904	924	899	918	916	+20	+2.2	-25	-2.7	+19	+2.1
Total S&E	11,284	11,210	10,923	10,746	10,958	-74	-0.7	-287	-2.6	-177	-1.6
										+212	+2.0
										-112	-18.9
										+12	+1.3
										-326	-2.9

<sup>a</sup>functional categories selected on basis of largest populations within agency.

Source: Prepared by GAO from data provided by NASA.

THE NATIONAL BUREAU OF STANDARDS (NBS)

Table 1 shows changes in the scientific and engineering ranks differed little from changes in the total agency workforce and the nonscientific and engineering ranks. In the period between September 30, 1979, and June 30, 1983, the number of scientists and engineers fell by 10.5 percent, the number of non-scientists and engineers by 11 percent, and the total agency workforce by 10.7 percent. Two bands of grade levels for scientific and engineering staff experienced some attrition during fiscal year 1980 through the third quarter of fiscal year 1983. The GS 7-9 scientific population declined by 45 percent by September 30, 1982. By June of 1983, the number of GS 7-9 scientists and engineers again equalled its 1979 level. Agency personnel officials stated that the most recent increase in the GS 7-9 category might be due to the agency's adoption of a different method for counting coop students as part of the category entitled "permanent full-time employees." The GS 11-12 level showed a 30.9-percent attrition from its ranks by June of 1983. Agency officials listed three reasons for these declines (1) a reduction-in-force beginning in the fall of 1980 and continuing until 1982, (2) the tendency of new entry level employees classified as "career-conditional" to leave the agency during a "RIF scare," and (3) a small number of hires at the GS 7-12 levels.

As table 2 shows, the largest number of separations for the scientific and engineering staff directly attributable to a reduction-in-force took place in fiscal year 1981. Losses appearing in the "non-RIF-related" category, however, could also be associated with reductions-in-force. For example, when asked to comment on the "non-RIF-related separations" between October 1979 and September 1980, NBS's personnel director suggested that the announcement of an imminent reduction-in-force may have caused personnel to voluntarily leave the agency. Other "losses" appearing in the "non-RIF-related" category include bumpings to lower grade levels.

As shown in table 3, the largest change in NBS' occupational categories was a 37-percent increase between September 30, 1979, and June 30, 1983, in computer science. According to a personnel official, this increase was due to hiring by the Institute for Computer Science and Technology at NBS.

As shown in table 4, one functional category--planning--showed steady decline with an overall loss of 52.5 percent in the period examined. The decrease in this category far exceeded the agency's loss of 10.5 percent of its entire workforce (scientific and nonscientific employees) during the same timeframe. NBS's personnel director explained this decline by describing the agency's management decision to gradually phase out NBS's planning

APPENDIX V

APPENDIX V

unit. Another functional category--test and evaluation--declined by nearly 42 percent during fiscal years 1980 and 1981 and then levelled off. This decline occurred because of the decrease in work the NBS's National Measurement Laboratory performed in the test and evaluation area for other agencies. As these agencies faced budget cutbacks, the amount of work the National Measurement Laboratory performed for these agencies also decreased.



NATIONAL BUREAU OF STANDARDS

Table 2  
Separations Among Scientific Personnel by Type and Grade Level  
(Permanent Full-Time Employees)

Type of separation	FY 1980 10/01/79- 9/30/80	FY 1981 10/01/80- 9/30/81	FY1982 10/01/81- 9/30/82	FY1983 10/01/82- 6/30/83
	Number	Number	Number	Number
RIF related	7	55	15	2
GS 7-9	0	4	2	0
GS 11-12	1	8	3	0
GS 13-15	6	43	10	2
SES	0	0	0	0
All other separations	117	88	76	39
GS 7-9	7	6	1	1
GS 11-12	21	25	14	6
GS 13-15	77	54	52	30
SES	12	3	9	2
Total separations	124	143	91	41

Source: Prepared by GAO from data provided by NBS.

## NATIONAL BUREAU OF STANDARDS

Table 3  
Scientific Employment by Occupation a  
(Permanent Full-Time Employees)

Selected occupational series	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change						Overall change	
						FY 1980		FY 1981		FY 1982		FY 1983 10/01/82 - 6/30/83	
						No.	Percent	No.	Percent	No.	Percent	No.	Percent
Physics	458	448	417	398	401	+10	+2.2	-31	-6.9	-19	-4.6	+3	+0.8
Chemistry	261	252	233	222	223	-9	-3.4	-19	-7.5	-11	-4.7	+1	+0.5
General Physical Science	151	160	157	157	151	+9	+6.0	-3	-1.9	0	0.0	-6	-3.8
Electronic Engineering	121	119	116	118	124	-2	-1.7	-3	-2.5	+2	+1.7	+6	+5.1
Mechanical Engineering	93	87	81	73	73	-6	-6.5	-6	-6.9	-8	-9.9	0	0.0
Computer Science	54	55	55	64	74	+1	+1.9	0	0.0	+9	+16.4	+10	+15.6
Other S&E	310	297	239	238	250	-13	-4.2	-58	-19.5	-1	-0.4	+12	+5.0
Total S&E	1,448	1,418	1,298	1,270	1,296	-30	-2.1	-120	-8.5	-28	-2.2	+26	+2.0
Overall change													
						-57	-12.4						
						-38	-14.6						
						0	0.0						
						+3	+2.5						
						-20	-21.5						
						+20	+37.0						
						-60	-19.4						
						-152	-10.5						

aOccupations selected on basis of largest populations within agency.

Source: Prepared by GAO from data provided by NBS.

## NATIONAL BUREAU OF STANDARDS

Table 4  
Scientific Employment by Functional Classification<sup>a</sup>  
(Permanent Full-Time Employees)

Selected functional category	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change				Overall change	
						FY 1980	FY 1981	FY 1982	FY 1983 10/01/82 - 6/30/83	9/30/79 - 6/30/83	
						No. Percent	No. Percent	No. Percent	No. Percent	No. Percent	
Research	736	750	717	713	726	+14 +1.9	-33 -4.4	-4 -0.6	+13 +1.8	-10 -1.4	
Development	304	285	261	256	280	-19 -6.3	-24 -8.4	-5 -1.9	+24 +9.4	-24 -7.9	
Management	163	154	140	133	134	-9 -5.5	-14 -9.1	-7 -5.0	+1 +0.8	-29 -17.8	
Test & Evaluation	59	47	34	30	32	-12 -20.3	-13 -27.7	-4 -11.8	+2 +6.7	-27 -45.8	
Planning	40	35	31	25	19	-5 -12.5	-4 -11.4	-6 -19.4	-6 -24.0	-21 -52.5	
Other S&E	146	139	115	113	105	-7 -4.8	-24 -17.3	-2 -1.7	-8 -7.1	-41 -28.1	
Total S&E	1,448	1,418	1,298	1,270	1,296	-30 -2.1	-120 -8.5	-28 -2.2	+26 +2.0	-152 -10.5	

<sup>a</sup>functional categories selected on basis of largest populations within agency.

Source: Prepared by GAO from data provided by NBS.



THE NATIONAL INSTITUTES OF HEALTH (NIH)

Table 1 shows increases across the board in the total agency workforce (7.2%), scientific and engineering staff (3.2%), and nonscientific and engineering staff (10.7%). It also profiles changes in the scientific staff by grade level showing slight attrition at the GS 7-9 levels during fiscal years 1980 and 1981. Agency officials explained that these declines resulted from government-wide hiring freezes. Data showing a rise in the number of employees in the GS 7-9 ranks for June 30, 1983, reflect a lifting of a freeze by the Department of Health and Human Services in February 1983. Table 1 also shows a steady rate of decline in NIH's executive ranks in all of the fiscal years examined. Retirements and resignations accounted for this attrition, according to an agency personnel official.

No reductions-in-force have occurred at NIH and as table 2 shows, the number of separations of employees from NIH steadily declined between fiscal years 1980 and 1983.

The NIH profile of scientific occupations in table 3 changed little, with the exception of the general health science category, which saw an increase of 15.5 percent in contrast to a general agency increase of 7.2 percent in the period examined.

Similarly, the picture of employees engaged in different scientific and technical functions (table 4) showed little change, with the exception of a 12-percent increase in the number of those engaged in research contract and grant administration and a 15-percent increase in employees involved in the development function between September 1979 and the third quarter of fiscal year 1983.

## NATIONAL INSTITUTES OF HEALTH

Table 1  
Change in Scientific and Overall Employment by Agency  
(Permanent Full-Time Employees)

Agency	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change				Overall change	
						FY 1980	FY 1981	FY 1982	FY 1983 10/01/82 - 6/30/83	9/30/79 - 6/30/83	
						No. Percent	No. Percent	No. Percent	No. Percent	No. Percent	
Total	5,798	5,643	5,884	6,059	6,214	-155 -2.7	+241 +4.3	+175 +3.0	+155 +2.6	+416 +7.2	
Non scientific & engineering staff	3,066	2,959	3,155	3,329	3,395	-107 -3.5	+196 +6.6	+174 +5.5	+66 +2.0	+329 +10.7	
Scientific & engineering staff	2,732	2,684	2,729	2,730	2,819	-48 -1.8	+45 +1.7	+1 +0.04	+89 +3.3	+87 +3.2	
GS 7-9	861	796	764	747	804	-65 -7.5	-32 -4.0	-17 -2.2	+57 +7.6	-57 -6.6	
GS 11-12	563	569	595	610	613	+6 +1.1	+26 +4.6	+15 +2.5	+3 +0.5	+50 +8.9	
GM and GS 13-15	1,130	1,147	1,204	1,217	1,250	+17 +1.5	+57 +5.0	+13 +1.1	+33 +2.7	+120 +10.6	
SES	178	172	166	156	152	-6 -3.4	-6 -3.5	-10 -6.0	-4 -2.6	-26 -14.6	

Source: Prepared by GAO from data provided by NIH.

NATIONAL INSTITUTES OF HEALTH

Table 2  
Separations Among Scientific Personnel by Type and Grade Level  
(Permanent Full-Time Employees)

Type of separation	FY 1980 10/01/79- 9/30/80	FY 1981 10/01/80- 9/30/81	FY1982 10/01/81- 9/30/82	FY1983 10/01/82- 6/30/83
	Number	Number	Number	Number
RIF related	0	0	0	0
GS 7-9	0	0	0	0
GS 11-12	0	0	0	0
GM/GS 13-15	0	0	0	0
SES	0	0	0	0
All other separations	227	215	207	130
GS 7-9	133	115	113	63
GS 11-12	39	40	32	29
GM/GS 13-15	45	47	50	31
SES	10	13	12	7
Total separations	227	215	207	130

Source: Prepared by GAO from data provided by NIH.

## NATIONAL INSTITUTES OF HEALTH

Table 3  
Scientific Employment by Occupation<sup>a</sup>  
(Permanent Full-time Employees)

Selected occupational series	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change				Overall change	
						FY 1980	FY 1981	FY 1982	FY 1983 10/01/82 - 6/30/83	9/30/79 - 6/30/83	
						No. Percent	No. Percent	No. Percent	No. Percent		
Chemistry	569	561	554	548	554	-8 -1.4	-7 -1.2	-6 -1.1	+6 +1.1	-15	-2.6
Nurse	487	448	454	455	494	-39 -8.0	+6 +1.3	+1 +0.2	+39 +8.6	+7	+1.1
General Biological Science	356	359	363	366	367	+3 +0.8	+4 +1.1	+3 +0.8	+1 +0.3	+11	+3.1
General Health Science	342	350	374	382	395	+8 +2.3	+24 +6.9	+8 +2.1	+13 +3.4	+53	+15.5
Microbiology	203	198	197	197	208	-5 -2.5	-1 -0.5	0 0.0	+11 +5.6	+5	+2.5
Medical Officer	181	193	204	197	196	+12 +6.6	+11 +5.7	-7 -3.4	-1 -0.5	+15	+8.3
Other S&E	594	575	583	585	605	-19 -3.2	+8 +1.4	+2 +0.3	+20 +3.4	+11	+1.9
Total S&E	2,732	2,684	2,729	2,730	2,819	-48 -1.8	+45 +1.7	+1 +0.04	+89 +3.3	+87	+3.2

<sup>a</sup>Occupations selected on basis of largest populations within agency.

Source: Prepared by GAO from data provided by NIH.

## NATIONAL INSTITUTES OF HEALTH

Table 4  
Scientific Employment by Functional Classification<sup>a</sup>  
(Permanent Full-Time Employees)

Selected functional category <sup>a</sup>	Total 9/30/79	Total 9/30/80	Total 9/30/81	Total 9/30/82	Total 6/30/83	Annual change				Overall change	
						FY 1980	FY 1981	FY 1982	FY 1983 10/01/82 - 6/30/83	9/30/79 - 6/30/83	
						No. Percent	No. Percent	No. Percent	No. Percent	No. Percent	Percent
Research	1,359	1,358	1,383	1,385	1,406	-1 -0.07	+25 +1.8	+2 +0.1	+21 +1.5	+47	+3.5
Clinical Practice, Counseling, & Ancillary Medical Services	642	607	615	605	644	-35 -5.5	+8 +1.3	-10 -1.6	+39 +6.4	+2	+0.3
Research Contract and Grant Admin.	337	340	350	366	378	+3 +0.9	+10 +2.9	+16 +4.6	+12 +3.3	+41	+12.2
Data Collection, Processing, and Analysis	100	96	99	99	101	-4 -4.0	+3 +3.1	0 0.0	+2 +2.0	+1	+1.0
Development	86	80	80	75	73	-6 -7.0	0 0.0	-5 -6.3	-2 -2.7	+13	+15.1
Other S&E	208	203	202	200	217	-5 -2.4	-1 -0.5	-2 -1.0	+17 +8.5	+9	+4.3
Total S&E	2,732	2,684	2,729	2,730	2,819	-48 -1.8	+45 +1.7	+1 +0.04	+89 +3.3	+87	+3.2

<sup>a</sup>Functional categories selected on basis of largest populations within agency.

Source: Prepared by GAO from data provided by NIH.

THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

Table 1 displays a net loss in the scientific workforce of 14.9 percent compared to a net loss of 2.3 percent in the non-scientific and engineering workforce between March 1979 and October 1983. Overall, the workforce declined by 12.5 percent. Not only table 1 but also tables 3 and 4 show an increase in fiscal year 1980, significant attrition of certain segments of OSHA's scientific workforce between September 1980 and September 1982 and finally an increase in the number of OSHA scientists in fiscal year 1983. Agency officials attributed losses between September 1980 and September 1982 to the introduction of a freeze on hiring beginning in December 31, 1980. Departures also resulted from a formal reduction-in-force process in which employees separated rather than accept other geographic assignments and non-RIF-related separations due to "RIF scares."

More specifically, table 1 shows that losses in OSHA's scientific staff between September 1980 and September 1982 were proportionally higher than losses in the nonscientific and technical agency population. Scientists declined by 26-percent while the agency's nonscientific and engineering workforce declined by 9.5 percent. Two groupings of grade levels were most significantly affected in the scientific and engineering staff during this timeframe. The GS 7-9 ranks declined by 70.6 percent while the number of GM/GS 13-15 scientific employees fell by 24.7 percent. Net decreases from September 1979 to June 1983 in the two categories were 55.6 percent and 5.6 percent, respectively.

There is no table 2. The agency was not able to provide us with data on the number of separations due to RIF and non-RIF-related reasons because the agency did not collect it.

While table 3 shows staff increases between March 31, 1979, and September 30, 1980, losses from two occupations--safety specialists and industrial hygienists--occurred September 30, 1980. For the next 2 years, the number of safety specialists declined by 20 percent while the number of industrial hygienists fell by 38.4 percent. The number of specialists in both of these categories then increased in fiscal year 1983, for overall losses of 8.3 percent and 18.7 percent, respectively. A 45.5-percent loss of safety engineers occurred between March 31, 1979, and October 10, 1983.

Table 4 shows that the scientific and engineering staff in regulatory enforcement dropped by 21.8 percent from March 31, 1979, to September 30, 1982, but increased by 9.8 percent in fiscal year 1983 for an overall loss of 14.1 percent. Changes in this category reflect those occurring in the safety specialist and industrial hygienist occupational categories (see table 3). Agency officials noted that these two occupations are primarily engaged in activities related to regulatory enforcement.

## OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Table 1  
Change in Scientific and Overall Employment by Agency  
(Permanent Full-time Employees)

Agency	Total 3/31/79	Total 9/30/80	Total 11/30/81	Total 9/30/82	Total 10/10/83	Annual change						Overall change	
						3/31/79 - 9/30/80	No. Percent	10/01/80 11/30/81	No. Percent	12/01/83 - 9/30/82	No. Percent	10/01/82 - 10/10/83	No. Percent
Total	2,076	2,260	1,989	1,751	1,817	+193 +9.3	-280 -12.3	-238 -12.0	+66 +3.8	-259 -12.5	-9 -2.3	-250 -14.9	-170 -55.6
Non scientific & engineering staff	398	433	409	392	389	+35 +8.8	-24 -5.5	-17 -4.2	-3 -0.8				
Scientific & engineering staff	1,678	1,836	1,580	1,359	1,428	+158 +9.4	-256 -13.9	-221 -14.0	+69 +5.1				
GS 7-9	306	248	169	73	136	-58 -19.0	-78 -31.9	-96 -56.8	+63 +86.3				
GS 11-12	934	1,040	945	872	872	+106 +11.3	-95 -9.1	-73 -7.7	0 0.0				
GM/GS 13-15	427	534	452	402	403	+107 +25.1	-82 -15.4	-50 -11.1	+1 +0.2				
SES	11	14	14	12	17	+3 +27.3	+0 +0.0	-2 -14.3	+5 +41.7				

Source: Prepared by GAO from data provided by OSHA.

## OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Table 3  
Scientific Employment by Occupation<sup>a</sup>  
(Permanent Full-Time Employees)

Selected occupational series	Total 3/31/79	Total 9/30/80	Total 11/30/81	Total 9/30/82	Total 10/10/83	Annual change										Overall change	
						3/31/79 - 9/30/80		10/01/80 - 11/30/81		12/01/83 - 9/30/82		10/01/82 - 10/10/83		3/31/79 - 10/10/83		No.	Percent
						No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent		
Safety Specialist	876	942	850	754	803	+66	+7.5	-92	-9.8	-96	-11.3	+49	+6.5	-73	-8.3		
Industrial Hygiene	573	667	506	411	466	+94	+16.4	-161	-24.1	-95	-18.8	+55	+13.4	-107	-18.7		
Safety Engineering	143	120	110	87	78	-23	-16.0	-10	-8.3	-23	-20.9	-9	-10.3	-65	-45.5		
Chemistry	59	55	67	57	47	-4	-6.8	+12	+21.8	-10	-14.9	-10	-17.5	-12	-20.3		
General Health Science	6	19	16	19	12	+13	+216.7	-3	-15.8	+3	+18.8	-7	-36.8	+6	+100.0		
Other S&E	21	33	31	31	22	+12	+57.1	-2	-6.0	0	0.0	-9	-29.0	+1	+4.8		
Total S&E	1,678	1,836	1,580	1,359	1,428	+158	+9.4	-256	-13.9	-221	-14.0	+68	+5.1	-250	-15.0		

Occupations selected on basis of largest populations within agency.

The occupation of safety specialist is not identified by OPM as a scientific occupation. However, personnel and budget officials at OSHA claim that since safety specialist perform essentially the same work as industrial hygienists, they should be included in any set of data describing OSHA's scientific workforce.

Source: Prepared by GAO from data provided by OSHA.



## OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Table 4  
Scientific Employment by Functional Classification<sup>a</sup>  
(Permanent Full-Time Employees)

Selected occupational series	Total 3/31/79	Total 9/30/80	Total 11/30/81	Total 9/30/82	Total 10/10/83	Annual change						Overall change	
						3/31/79 - 9/30/80	10/01/80 11/30/81	12/01/83 - 9/30/82	10/01/82 - 10/10/83	3/31/79 - 10/10/83	No. Percent	No. Percent	No. Percent
Regulatory Enforcement	1,401	1,320	1,160	1,096	1,203	+81 -5.8	-160 -12.1	-64 -5.5	+107 +9.8	-198 -14.1			
Standards and Specifications	131	139	138	121	103	+8 +6.1	-1 -0.7	-17 -12.3	-18 -14.9	-28 -21.4			
Technical Assistance and Consulting	63	72	72	70	67	+9 +14.3	0 0.0	-2 -2.8	-3 -4.3	+4 +6.3			
Teaching & Training	43	54	44	26	33	+11 +25.6	-10 -18.5	-18 -40.9	+7 +26.9	-10 -23.3			
Other S&E	40	251	166	46	22	+211 +527.5	-85 -33.9	-120 -72.3	-24 -52.2	-18 -45.0			
Total S&E	1,678	1,836	1,580	1,359	1,428	+158 +9.4	-256 -13.9	-221 -14.0	+69 +5.1	-250 -14.9			

Occupations selected on basis of largest populations within agency.

Source: Prepared by GAO from data provided by OSHA.